

36. A multi-gene expression profile of a sample comprising a hybridizing substrate to which is hybridized a collection of amplified specific nucleic acid messages, which specific nucleic acid messages having been amplified *in vitro* simultaneously with RNA polymerase and a single primer linked to an RNA polymerase promoter, wherein said amplified specific nucleic acid messages each has a relative abundance which reflects the relative representation of a given sequence relative to other sequences in the collection of specific unamplified nucleic acid messages within the sample.

37. The multi-gene expression profile of claim 36, wherein the hybridizing substrate is a nylon membrane.

38. The multi-gene expression profile of claim 35 wherein the hybridization is by northern or Southern blot.

39. The multi-gene expression profile of claim 35 wherein the sample is brain, spleen, bone, heart, vascular tissue, lung, kidney, liver, pituitary, endocrine glands, lymph node, dispersed primary cells, or tumor cells.

40. The multi-gene expression profile of claim 35 wherein the sample is blood and the expression of hemoglobin is reduced relative to the other specific messages and is diagnostic of thalassemia.

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45. A multi-gene expression profile of a single cell comprising a hybridized collection of amplified specific nucleic acid messages, which specific nucleic acid messages are amplified *in vitro* simultaneously with an RNA polymerase and a single primer linked to RNA polymerase promoter, wherein said multi-gene expression profile consists of said specific nucleic acid messages, each having a relative abundance which reflects the relative level of